



Intel® 815E Entry Appliance Platform

Communications Appliance Reference Design

Intel in Communications

Product Overview

This reference design was developed to enable OEMs to significantly reduce their time-to-market by providing a complete hardware system design that can be readily used off-the-shelf or customized further to accommodate additional features without reworking the core microprocessor and chipset design. The Intel® 815E Entry Appliance Platform is specifically targeted at entry-level communications appliances used in small to medium businesses such as Voice over IP media servers or security systems such as firewalls and VPNs (Virtual Private Networks). This reference design combines the price/performance and low-power advantages of the Ultra Low Voltage Intel® Celeron® Processor with the flexible I/O capabilities of the Intel® 815E Chipset to provide a hardware design that maximizes system performance while balancing the low-power and low-cost requirements of this appliance market segment.

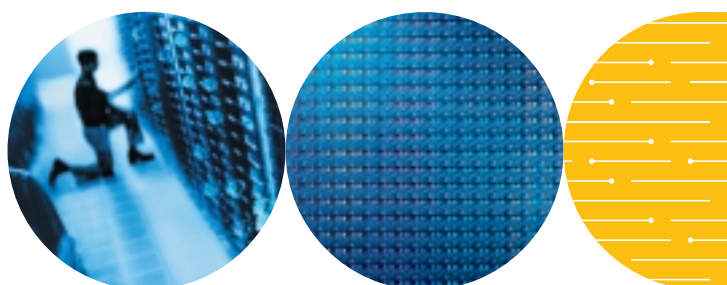


Product Highlights

Ultra Low Voltage Intel® Celeron® Processor:

Provides exceptional price/performance value for low-cost, low-power communications appliances

- 400 MHz processor speed
- 100 MHz processor side bus
- 256K on-die L2 cache operating at core frequency with Error Checking and Correcting (ECC)
- Intel® MMX™ technology to support rich voice media applications
- 4.2 W TDP (Maximum) 3.75 TDP (Typical)
- Built on the Intel® 0.13 micron process
- Low-profile, surface-mount µFCBGA package (35x35mm) with 479 balls in area array



Intel® 815E Chipset:**Provides flexible networking and I/O capabilities that are cost effective without compromising system responsiveness and performance**

- Supports up to 512 MB of Non-ECC, 100/133 MHz SDRAM Memory
- Support for ATA-100
- Supports 66, 100, and 133 MHz processor side bus configurations
- Supports both 400 MHz and 650 MHz processor speeds for the Ultra Low Voltage Intel® Celeron® Processor
- 32-bit/33 MHz PCI
- Two USB controllers provide up to 24 Mbps of bandwidth across four ports
- GMCH is designed with integrated graphics that are optimized for 133 MHz SDRAM and supports an AGP4X plug-in for upgrade capability
- Integrated LAN capability can be enabled to support up to three distinct networking connections (1 Mbps home PNA, 10/100 Mbps LAN, and managed 10/100 Mbps LAN). All three utilize Intel® SingleDriver™ Technology, a common set of drivers which simplifies network complexity and increases the ease of deployment.
- AC'97 provides up to six channels with surround sound capability

Board Features:

- Dual 10/100 BASE-T Ethernet Ports utilizing Intel® 82551ER LAN controllers to provide 10/100 auto-negotiating and full-duplexing
- One full-length 32-bit, 33 MHz PCI slot for I/O expansion
- Board utilizes a 6-layered EmbeddedATX form factor (9.6" x 9.6") designed for compact 1U appliances.
- System design supports both passive and active thermal solutions
- One fan connector is provided for active cooling

- Provides both 44-pin (laptop) and 40-pin (desktop) IDE connectors to support ATA-100 Hard Drives
- One Super I/O chip to interconnect legacy devices such as floppy drives
- Two serial ports
- Four USB ports
- Utilizes onboard LEDs to indicate power-on and Ethernet link activity

Reference Design Materials Include:

- User's Manual
- Orcad* Version 9.2 schematics
- PDF schematics
- Bill of materials list

Benefits to Developers**The Intel® 815E Entry Appliance Platform offers several significant advantages to developers:****Faster Time-To-Market**

- The Intel® 815E Entry Appliance Platform provides a fully validated system design that developers can use as a base building block for their design. Intel® communications reference designs offer valuable reference materials such as schematics that provide an off-the-shelf blueprint to enable developers to decrease design time and concentrate their resources on designing their own creative solutions for specific communications applications.

Risk-free Validation & Quality

- The Intel 815E Entry Appliance Platform is based off of validated Intel® Architecture platforms ensuring design stability and minimizing risk.
- Intel's industry-leading manufacturing capacity and quality requirements help ensure product reliability and customer satisfaction.

Economical

- The Intel® 815E Entry Appliance Platform delivers the best price/performance design for low-cost, low-power entry-level communications appliances.
- Schematics are available for download at no cost from Intel's Developer Site at:
developer.intel.com/platforms/applied/eiacomm/reference_configs.htm

Extended Product Lifecycle

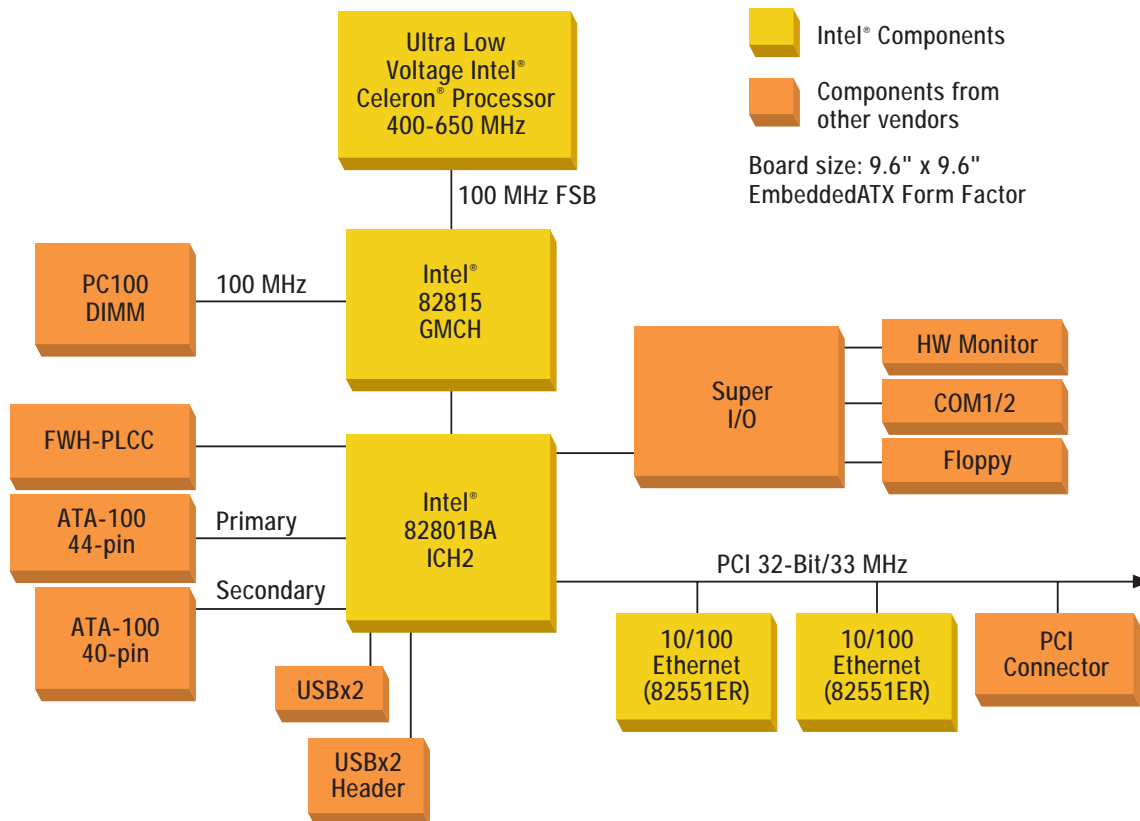
- Embedded Intel® processors and other components are designed to meet the extended lifecycle requirements of communications appliances with typically 5-7 years of support dependent upon business conditions.

Broadest Application Support

- The Intel® 815E Entry Appliance Platform is based on the open Intel® Architecture that is widely known to most programmers. Moreover, this design supports multiple operating systems, including Linux*, Windows 2000*, and Windows XP*.

Third-Party Vendor Support

Intel works with multiple independent hardware and software vendors to enable the efficient implementation of designs based on the Intel® 815E Entry Appliance Platform. For more information, visit the Intel Web site at: developer.intel.com/platforms/applied/eiacomm/reference_configs.htm



Intel Access

Developer's Site:	developer.intel.com
Embedded Intel® Architecture:	developer.intel.com/design/intarch
Other Intel Support:	Intel Literature Center developer.intel.com/design/litcentr/ (800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office.
General Information Hotline:	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST

For more information, visit the Intel Web site at: developer.intel.com

UNITED STATES AND CANADA
Intel Corporation
Robert Noyce Bldg.
2200 Mission College Blvd.
P.O. Box 58119
Santa Clara, CA 95052-8119
USA

EUROPE
Intel Corporation (UK) Ltd.
Pipers Way
Swindon
Wiltshire SN3 1RJ
UK

ASIA-PACIFIC
Intel Semiconductor Ltd.
32/F Two Pacific Place
88 Queensway, Central
Hong Kong, SAR

JAPAN
Intel Kabushiki Kaisha
P.O. Box 115 Tsukuba-gakuen
5-6 Tokodai, Tsukuba-shi
Ibaraki-ken 305
Japan

SOUTH AMERICA
Intel Semicondutores do Brazil
Rue Florida, 1703-2 and CJ22
CEP 04565-001 Sao Paulo-SP
Brazil

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER, AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. Intel products are not intended for use in medical, life saving, or life sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

* Other names and brands may be claimed as the property of others.

Copyright © 2002, Intel Corporation. All rights reserved.

Intel, SingleDriver, MMX and Celeron are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Printed in USA.

1102/OC/EW/PP/2.5K

 Please Recycle

251659-001

